

SENATE Agriculture

Exhibit No. 1

Date 2/13/14

Bill No. SB 176



Food and Agriculture
Organization of the
United Nations

World Soil Day
5 December



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Defining dirt

Longfellow kids ask lawmakers to honor Montana's 'state soil'



ADRIAN SANCHEZ-GONZALEZ/CHRONICLE

State senator-elect Jennifer Pomnichowski, center, looks over the notes from Longfellow Elementary fourth-grader Jesse House on Wednesday after an announcement by students and Pomnichowski to introduce a bill to name a state soil at the upcoming legislative session in Helena.

By GAIL SCHONTZLER
Chronicle Staff Writer

Bozeman fourth-graders have the scoop on soil.

Longfellow School students are asking the 2015 Legislature to name the type of dirt underlying one of Montana's richest wheat and beef growing areas as the state's official state soil.

Called Scobey soil, it's found in the Golden Triangle area near Great Falls and the Hi-Line, students told

reporters Wednesday at a press conference. It's so good at holding rainwater and moisture, farmers can grow crops without irrigation,

Soils support Montana's \$4.7 billion agriculture industry, the kids said. Yet Montana is one of the few farm states that haven't named an official state soil.

"It's time," said state Rep. JP Pomnichowski, D-Bozeman, recently elected to the Montana Senate. Named to the Senate Agriculture Committee, she has requested that a soils bill be drafted.

Fourth-grade teachers Debbie Nelson and Kristin Sigler — honored as Montana's Centennial Bell history teachers of the year three years ago — plan to take their students to the Capitol to testify for the bill in the 2015 legislative session.

Sigler said students are not only learning about the science of soils, they're learning how the legislative process works. It's showing students how to apply classroom learning in the real world, Nelson said.

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USDA Joins Global Partners to Kick Off International Year of Soils in 2015

WASHINGTON, Dec. 5, 2014 – Today, USDA joins nations from across the globe to kick off the International Year of Soils, an effort to highlight the importance of soil in everyday life. Under Secretary for Natural Resources and Environment Robert Bonnie will address members of the 68th United Nations General Assembly, which designated 2015 for the yearlong celebration.

"We are excited to be working with the United Nations to help raise awareness and promote the importance of conservation of our soil resources," Bonnie said. "USDA is embracing this unique opportunity to tell the world about the importance of soil conservation and how we've worked with private landowners since 1935 to protect and improve this priceless natural resource."

UN's Food and Agriculture Organization spearheaded the global International Year of Soils campaign within the framework of the [Global Soil Partnership](#). The year of awareness aims to increase understanding of the importance of soil for food security and essential ecosystem functions. Soils play a crucial role in food security, hunger eradication, climate change adaptation, poverty reduction and sustainable development.

Bonnie is one of several leaders who will address the assembly today, on [World Soil Day](#), about the importance of soil. USDA's Natural Resources Conservation Service (NRCS) – America's agency for soil conservation, classification and studies – plans to make the year a memorable one.

NRCS works hand-in-hand with producers through [technical and financial assistance programs and services](#) to help ensure their success. The agency was born amid the Dust Bowl era of the 1930s, the nation's largest environmental disaster caused by over cultivation, drought and record-breaking temperatures.

"NRCS conservationists work with America's farmers and ranchers to take care of the soil, ensuring agricultural operations are sustainable for many years to come," NRCS Chief Jason Weller said.

For more information on International Year of Soils, visit www.nrcs.usda.gov/.

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Dirt's big year

Last year may have been a lot of things to a lot of people but one thing it surely wasn't was predictable.

I mean who foresaw last year's record-setting high in the U.S. stock market, the plunge in global crude oil prices, Russia's naked grab of Ukraine's sovereign territory or the Obama Administration's reaching out to Cuba?

Not me; I was a solid "Wow," "Whoa," "Nyet," and "Really?" on four of the biggest events to rock both the U.S. and its farmers in 2014.

This year I'm not taking any chances and announcing 2015's first big global event, the already announced (on Dec. 5 by the United Nation's Food and Agriculture Organization) "International Year of Soils." The goal of this year-long, worldwide emphasis, explains the U.N., is "to increase awareness and understanding of the importance of soil for food security and essential ecosystem functions."

You would think that everyone in the world might already be aware of how this thin layer of life-giving skin separates humanity's continuing rise from its complete collapse or that our future is rooted in how we responsibly and sustainably treat the very ground we stand on. (Links found at <http://farmandfoodfile.com/in-the-news/>.)

After all, it's not like soil conservation and soil health are dirty little secrets. The science underpinning both is well known and widespread.

What may be even less secret but far dirtier is how deeply and how long we've abused soil. We don't just treat it like dirt; we treat it as though it's less than dirt.

For example, according to a 2001 report published by the U.S. Department of Agriculture's Natural Resources Conservation Service, the yield reduction in Africa due to soil erosion already stands at more than eight percent.

That irreversible loss doesn't sound like much if you farm in the black earth country of Illinois or the yards-deep soil of the Pacific Northwest's Palouse. It's life and death, however, if you live - or hope to live - in Tanzania or Kenya.

The story is the same in many of the world's key farming regions. According to the same NRCS study, the "annual loss in productivity" due to soil erosion and degradation in southern Asia is equal to "36 million metric tons of cereal equivalent."

In U.S. terms, 36 MMT "cereal equivalent" is 65 percent of the entire 2014/15

American wheat crop.

We in the U.S. have no room to brag. "It is estimated that the total annual cost of erosion... is about \$44 billion per year or about \$247 per hectare [\$100 per acre] of cropland and pasture," reckoned USDA in 2001.

Taken across the globe, total soil erosion and soil degradation numbers are knee-buckling: "The annual loss of 75 billion tons of soil costs the world about \$400 billion per year, or about \$70 per person per year."

Changing the perspective doesn't change the importance of soil or soil erosion. According to USDA, only 3 percent of earth's surface is "considered as prime Class I land... [while] another 8 percent is in Classes II and III. This 11 percent of land must

feed... the 7.6 billion expected in 2020..."

But "high population density is not necessarily related to land degradation; it is what a population does to the land that determines the extent of degradation."

And as population continues to grow, the amount of arable land does not. Writing for Dec. 22 issue of Agri-Pulse, Marshall Matz, the former counsel for the Senate Ag Committee, cited European data that shows the amount of arable land per person today is equal to 0.4 acre, or a patch 40 meters by 40 meters. By 2050, with 2 billion more in population, that tiny parcel will shrink by 30 percent.

Small? You bet. But it's bigger than the six inches of thin-and-getting-thinner topsoil that separates success from catastrophe if we don't take better care of the gift we've been given.

We can. We must. Now. This year. ★

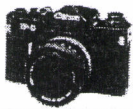
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Farm & Food File

By ALAN GUEBERT, Columnist


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Official State soils

Official soils listed by state. (List by state or year)

State ▼	Name	Designated as	Year
Alabama	Bama soil series	Official state soil for Alabama	1997
Alaska	[None]		
Arizona	[None]		
Arkansas	Stuttgart soil series	Official Arkansas state soil	1997
California	San Joaquin soil	Official soil of California	1997
Colorado	[None]		
Connecticut	[None]		
Delaware	Greenwich loam	Official soil of the state	2000
Florida	Myakka fine sand	Official Florida state soil	1989
Georgia	[None]		
Hawaii	[None]		
Idaho	[None]		
Illinois	Drummer silty clay loam	Official state soil	2001
Indiana	[None]		
Iowa	[None]		
Kansas	Harney silt loam	Official soil	1990
Kentucky	Crider soil series	State soil	1990
Louisiana	[None]		
Maine	Chesuncook soil series	Official state soil	1999
Maryland	[None]		
Massachusetts	Paxton soil series	Official soil	1990
Michigan	Kalkaska soil series	Official soil	1990
Minnesota	Lester	Official soil	2012
Mississippi	Natchez silt loam	Official state soil	2003
Missouri	[None]		
Montana	[None]		
Nebraska	Holdrege series	Official state soil	1979
Nevada	Orovada series	Official state soil	2001
New Hampshire	[None]		
New Jersey	[None]		
New Mexico	[None]		
New York	[None]		
North Carolina	[None]		
North Dakota	[None]		
Ohio	[None]		
Oklahoma	Port silt loam	Official state soil	1987
Oregon	Jory soil	Official soil	2011
Pennsylvania	[None]		
Rhode Island	[None]		
South Carolina	[None]		
South Dakota	Houdek soil	Official state soil	1990
Tennessee	[None]		
Texas	[None]		
Utah	[None]		
Vermont	Tunbridge soil series	State soil	1985
Virginia	[None]		
Washington	[None]		
West Virginia	Monongahela silt loam	Official state soil	1997
Wisconsin	Antigo silt loam	State soil	1983
Wyoming	[None]		

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What is a Soil Survey?

What is a Soil Survey?

Soil survey, or **soil mapping**, is the process of classifying soil types and other soil properties in a given area and geocoding such information. It applies the principles of soil science, and draws heavily from geomorphology, theories of soil formation, physical geography, and analysis of vegetation and land use patterns. Primary data for the soil survey are acquired by field sampling and by remote sensing. Remote sensing principally uses aerial photography but LiDAR and other digital techniques steadily gaining in popularity. In the past, a soil scientist would take hard-copies of aerial photography, topo-sheets, and mapping keys into the field with them. Today, a growing number of soil scientists are bringing a ruggedized tablet computer and GPS into the field with them. The tablet may be loaded with digital aerial photos, LiDAR, topography, soil geodatabases, mapping keys, and more.

The term *soil survey* may also be used as a noun to describe the published results. In the United States, these surveys were once published in book form for individual counties by the National Cooperative Soil Survey. Today, soil surveys are no longer published in book form; they are published to the web and accessed on NRCS Web Soil Survey where a person can create a custom soil survey. This allows for rapid flow of the latest soil information to the user. In the past it could take years to publish a paper soil survey. Today it takes only moments for changes to go live to the public. Also, the most current soil survey data is made available at NRCS Soil Data Mart for high end GIS users such as professional consulting companies and universities.



The information in a soil survey can be used by farmers and ranchers to help determine whether a particular soil type is suited for crops or livestock and what type of soil management might be required. An architect or engineer might use the engineering properties of a soil to determine whether or not it was suitable for a certain type of construction. A homeowner may even use the information for maintaining or constructing their garden, yard, or home.

Sample of an aerial photo from a published soil survey

Wikipedia contributors, "Soil survey," *Wikipedia, The Free Encyclopedia*, http://en.wikipedia.org/w/index.php?title=Soil_survey&oldid=400588390 (accessed January 28, 2011).

How to Use a Soil Survey

From the [USDA](#):

A soil survey is a detailed report on the soils of an area.

The soil survey has maps with soil boundaries and photos, descriptions, and tables of soil properties and features.